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*NTIS HC \$3.00*

**A STUDY OF MORPHOLOGY, PROVENANCE, AND MOVEMENT OF DESERT SAND SEAS IN  
AFRICA, ASIA, AND AUSTRALIA**

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(E73-10060) A STUDY OF MORPHOLOGY,  
PROVENANCE AND MOVEMENT OF DESERT SAND  
SEAS IN AFRICA, ASIA AND AUSTRALIA  
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Type I Progress Report  
ERTS-A

- a. Title: A Study of Morphology, Provenance, and Movement of Desert Sand Seas in Africa, Asia and Australia

ERTS-A Proposal No.: SR 131

- b. GSFC ID No. of P.I.: IN 402

- c. Problems relating to progress:

A principal problem impeding progress of the dune investigation is the long lapse between the time of ordering and that of receipt of Retrospective Data Requests. Some materials requested as long ago as early October and approved by our Technical Monitor have not yet been received.

The great number of bulk images generated by our original Standing Order has been so large that processing along<sup>e</sup> has taken much of available time; as a remedy the number of frames requested has been drastically cut and the size of requested transparencies enlarged in order to speed up the cataloguing and analyzing.

- d. Discussion and plans:

Requests have been made to include coverage for five small dune areas in the U.S.A. in order to provide readily accessible analog~~ies~~es for the more remote foreign dune areas observed on ERTS imagery.

The optical appearance of various materials such as sand, water, vegetation and rocks, on ERTS images, and the means by which these appearances can be recognized through comparison of different bands and by use of repetitive passes are being studied.

e. Results and application:

The most significant result to date is recognition that dune complexes (above an as-yet-undetermined threshold size and shape) are indeed visible on ERTS images, that the extent and nature of dune fields in many remote areas of the world can, for the first time, be observed almost simultaneously and can be directly compared. The primary scientific problem at this stage in this project is to determine accurately the relationships among certain patterns, trends and boundaries clearly revealed on ERTS imagery to true surface configurations of desert landforms, and controlling factors such as wind and moisture. (Category 10C)

f. Reports:

None

g. Changes in operation

None

h. Changes in standing order forms

1. Reduction of frames from 1,153 to 385. Increase in test sites from original 7 large units to 15 smaller units based on actual dune distribution.
2. Change (3.1) rejection because of "cloud cover" from 100% to 50%.
3. Changes (3.2) in time periods for which data are required.

October 25, 1972

Section 4.0 changed our Standing Order to the larger size black-and-white positive transparencies and also asked for black-and-white bulk positive prints. The latter, we believe, are no longer available as a Standing Order, but we would like to order, retrospectively, one print of each frame from at least one cycle, after viewing the transparencies. (This matter was discussed with Technical Monitor by phone in advance).

i. ERTS Image Descriptor forms:

None

j. Changes in Data Request forms:

Retrospective Data requests after viewing the 70 mm. positive transparencies of these frames were as follows:

11/14/72	ADDDHHMMS	Observation	Identifier	E1055-08041
"	"	"	"	E1023-09543
"	"	"	"	E1023-09540
"	"	"	"	E1023-09534
"	"	"	"	E1041-06253
"	"	"	"	E1041-06244
"	"	"	"	E1041-06251
"	"	"	"	E1051-05391
"	"	"	"	E1036-01052

11/15/72	ADDDHHMMS	Observation	Identifier	E1048-05261
"	"	"	"	E1036-01040
"	"	"	"	E1036-01043
"	"	"	"	E1036-01045
"	"	"	"	E1031-00373
"	"	"	"	E1031-00375
"	"	"	"	E1031-00382
"	"	"	"	E1031-01061
"	"	"	"	E1036-01034
"	"	"	"	E1034-00542
"	"	"	"	E1034-00535
"	"	"	"	E1034-00544

11/16/72	ADDDHHMMS	Observation	Identifier	E1011-05193
"	"	"	"	E1034-00530
"	"	"	"	E1065-10324
"	"	"	"	E1065-10322
"	"	"	"	E1065-10315
"	"	"	"	E1065-10313
"	"	"	"	E1065-10324
"	"	"	"	E1065-10322
"	"	"	"	E1065-10315
"	"	"	"	E1065-10313
"	"	"	"	E1030-00310
"	"	"	"	E1030-00315

11/17/72	ADDDHHMMS	Observation	Identifier	E1071-09210
"	"	"	"	E1071-09212
"	"	"	"	E1071-04072
"	"	"	"	E1071-04075
"	"	"	"	E1030-00321
"	"	"	"	E1030-00330
"	"	"	"	E1030-00324
"	"	"	"	E1078-04483
"	"	"	"	E1078-04474

11/20/72	ADDDHHMMS	Observation	Identifier	E1073-04190
"	"	"	"	E1073-04192
"	"	"	"	E1073-08044
"	"	"	"	E1073-08041
"	"	"	"	E1070-00544
"	"	"	"	E1070-00582
"	"	"	"	E1071-01003
"	"	"	"	E1071-00594
"	"	"	"	E1071-01000
"	"	"	"	E1071-00591
"	"	"	"	E1071-00585
"	"	"	"	E1077-04420
"	"	"	"	E1077-04422
"	"	"	"	E1081-03212
"	"	"	"	E1061-06431
"	"	"	"	E1061-06434
"	"	"	"	E1061-06425
"	"	"	"	E1045-05081
"	"	"	"	E1079-10102
"	"	"	"	E1045-05083
"	"	"	"	E1089-07540
"	"	"	"	E1071-09203
"	"	"	"	E1083-07033
"	"	"	"	E1083-07040
"	"	"	"	E1083-07033
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"	"	"	"	E1078-04481

11/21/72	ADDDHHMMS	Observation	Identifier	E1072-05554
"	"	"	"	E1072-05565
"	"	"	"	E1070-05445
"	"	"	"	E1070-05443
"	"	"	"	E1097-06432
"	"	"	"	E1035-09205
"	"	"	"	E1072-05574
"	"	"	"	E1072-05560
"	"	"	"	E1072-05551
"	"	"	"	E1072-05572

11/22/72	ADDDHHMMS	Observation	Identifier	E1073-06024
"	"	"	"	E1073-06021
"	"	"	"	E1070-09174
"	"	"	"	E1070-09160
"	"	"	"	E1070-09145
"	"	"	"	E1072-07592
"	"	"	"	E1035-09211
"	"	"	"	E1072-01050
"	"	"	"	E1072-01043
"	"	"	"	E1074-06132
"	"	"	"	E1074-06135
"	"	"	"	E1073-06015
"	"	"	"	E1073-06012
"	"	"	"	E1073-06033
"	"	"	"	E1073-06030